



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/699,779

11/04/2003

Kenji Inoue

P03344-US DIV

5901

21254

7590

02/09/2006

MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER

SUMMONS, BARBARA

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,779	INOUE, KENJI	
	Examiner	Art Unit	
	Barbara Summons	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-20 and 27-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-20, 27-30, 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 31-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 31-33 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ehara et al. U.S. 5,905,418 (of record) for reasons of record substantially repeated below.

Fig. 1 of Ehara discloses a surface acoustic wave (SAW) branching filter with two SAW filter elements (Rx and Tx) that have different center frequencies corresponding to the receive and transmit frequencies of the device, wherein at least one of the two SAW filter elements as shown in Fig 25, comprises: a first wiring portion (a.k.a. series arm) between terminals IN and OUT; a plurality of second wiring portions (a.k.a. parallel arms) between the series arm and a reference potential terminal E; at least two single unit elements each comprising a first/series SAW resonator 114/118 having a second /parallel SAW resonator 120/124 at an input side thereof and a third/parallel SAW resonator 122/126 at an output side thereof, and each unit element having the reference potential sides of the second and third parallel SAW resonators connected to each other at a connection point/node and a corresponding inductance element 128/130 (see col. 10, line 6) located between the connection point and the reference potential terminal E.

Art Unit: 2817

Additionally, regarding the resonator resonant and anti-resonant frequencies, Ehara is modifying the prior art ladder filter of Fig. 8 such that the resonant frequency of the series resonators and the anti-resonant frequency of the parallel resonators must inherently substantially correspond to each other in order to form a usable band pass filter as evidenced by the other prior art of record and as also admitted by Applicant (see Applicant's specification at page 14, lines 13-20).

Regarding claim 31, the resonant frequency of the two single unit elements correspond with each other since they are both designed as section 106 in Fig. 23 (see col. 10, lines 7-10). Regarding claim 32, Fig. 25 of Ehara also shows a fourth resonator 116 between two first/series resonators 114 and 118, and resonator 112 can also be considered a fourth resonator between the first series resonator 114 and the input terminal. Regarding claim 33, since the equivalent circuit of the fourth SAW resonators 112 and 116 is an LC resonator circuit and because SAW resonators have both electrostatic and motional capacitance values, these resonators can also be considered capacitance elements" by the broadest interpretation of the term.

Allowable Subject Matter

3. Claims 5-20, 27-30, 34 and 35 are allowable over the prior art of record.

Response to Arguments

4. Applicant's arguments filed 11/23/05 have been fully considered but they are not persuasive.

Applicant argues that “the resonant frequency of the present invention is defined as a resonant frequency due to resonance generated responsive to electrostatic capacitance and inductance of the SAW resonator in the single unit element, which is a different concept from resonance/anti-resonance of the SAW resonator...” (see page 15, lines 10-13 of the amendment). This argument is not persuasive because Applicant is apparently attempting to give a special definition to the resonant frequency of the single unit element that is not included in the original specification. If Applicant believes they have included this special definition in the original specification, they are required to point out the location by page and line number. The Examiner can only find reference to the electrostatic capacitance of the SAW resonator and the inductance forming “attenuation poles” (see e.g. page 20, lines 1-6 and page 24, the last eleven lines thereof). The original specification only appears to repeat the claim language that the resonant frequencies of the “respective single unit elements are corresponding to each other” (page 24, lines 8-10) without providing a definition of such resonant frequencies.

Applicant argues that Ehara, Figure 23, functions differently than the invention, apparently due to the special definition of the resonant frequency of the single unit elements (see page 15, the paragraph beginning on line 14). This argument is not persuasive because the Examiner is not required to read Applicants definition into the claim, and the Examiner did not apply Fig. 23 of Ehara (see next paragraph below).

Applicant argues that “Figure 23 of Ehara does not disclose a plurality of single unit elements...” (see page 15, the first line of the last paragraph). This argument is not

Art Unit: 2817

persuasive because the Examiner has applied Fig. 25 of Ehara, which clearly shows two single unit elements as thoroughly described in the rejection above.

On page 16 of the amendment, Applicant turns to arguing Fig. 25 of Ehara (first full paragraph) and admits that Fig. 25 of Ehara would provide the technical advantages of the invention “in a certain specific case” including that the “capacitance and inductances of each SAW resonator may be determined to equalized the resonant frequencies of the SAW resonators to each other”. Applicant argues that Ehara makes no suggestion, but the Examiner disagrees as Ehara states that each single unit element is designed as section 106 and inductor 108 in Fig. 23 (see col. 10, lines 8-11) such that the two single unit elements will be the same, and the resonators will have equalized resonant frequencies.

Applicant finally argues regarding claim 31 that Ehara does not teach or suggest the clear language of the claim that “respective said predetermined resonant frequency of each of said single unit elements is corresponding with each other” (see page 16, the last three lines thereof). This argument is not persuasive because as mentioned above Ehara at col. 10, lines 8-11 does suggest the two single unit elements be designed the same, and further because the only previous mention of “said predetermined resonant frequency” refers back lines 10-11 of the claim which recite “a predetermined resonant frequency” of the “a first SAW resonator which is located in said first wiring portion” (i.e. a series arm resonator), such that it is not even required that all of the resonators in the single unit section have the equalized corresponding resonant frequencies, but only that the series resonators do. The Examiner suggests that if Applicant wants a special

Art Unit: 2817

definition for "a predetermined resonant frequency of the single unit element", that this definition be provided in the claim.

Regarding claims 32 and 33, Applicant argues that Ehara does not teach or suggest the "meritorious effect of the present invention by Figure 25" (see page 17, first paragraph). This argument is not persuasive because it is irrelevant. Ehara is only required to teach the recited structure of the invention, which it does, and not the "meritorious effects" thereof.

Applicant further argues that Ehara "does not intend to adjust resonant frequency of single unit elements of Figure 25", and therefore "does not teach or suggest such use or the addition of electrostatic capacitance" or of "SAW resonators having no resonant frequency (namely, electrostatic capacitance)". These arguments are all unpersuasive because they are not commensurate with the scope of the claims. For example, there is nothing in the claim language that requires the "additional resonator" of Ehara (e.g. resonator 116 not in the single unit elements) to "adjust the resonant frequency of the single unit element". Additionally, all SAW resonators inherently have a resonant frequency and have electrostatic capacitance, so the additional resonator of Ehara meets all of the current claim language. When Applicant argues that Ehara does not teach the insertion "of a SAW resonator having no resonant frequency" (see page 17, the next to last full paragraph), since all SAW resonators inherently have a resonant frequency, perhaps Applicant means the addition of SAW resonators having no resonant frequency in the pass band of the filter? In any case, there is no language in the claim requiring the additional resonator have such a feature.

In the first paragraph on page 18, appears to argue that in the unit elements, Ehara does not disclose the claim language that is equivalent to parallel resonators of the single unit elements having an anti-resonant frequency corresponding to the predetermined resonant frequency of the series resonator. This argument is unpersuasive because as explained in the rejection, Ehara is modifying the prior art ladder filter as shown, for example, in Fig. 8 which inherently has the anti-resonant frequencies of the parallel resonators substantially equal to the resonant frequencies of the series resonators to provide the ladder filter band pass filter response, and Ehara is not modifying the resonant/anti-resonant frequencies of the resonators, but is only adding the impedance circuits 128 and 130 in Fig. 25.

Applicant's arguments regarding claim 33 are unclear since the argument that "Ehara does not disclose insertion (addition) of a SAW resonator having no resonant frequency" has nothing to do with the clear claim language listed in the next paragraph, which requires that the parallel resonators of the single unit elements have an anti-resonant frequency corresponding to the resonant frequency of the series resonator (see page 18, the last three paragraphs). Therefore, these arguments are not persuasive, firstly because there is not claim language in claim 33 requiring the addition of "a SAW resonator having no resonant frequency", and as explained in the previous paragraph, Ehara meets the requirements for resonant/anti-resonant frequency placements of the SAW series/parallel resonators of a typical band pass ladder filter.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (571) 272-1771. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 271-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bs
February 6, 2006



**BARBARA SUMMONS
PRIMARY EXAMINER**